



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/005,827	11/08/2001	Woo Sik Yoo	M-11914 US	3118
24251	7590	10/22/2003	EXAMINER	
SKJERVEN MORRILL LLP 25 METRO DRIVE SUITE 700 SAN JOSE, CA 95110			TRINH, MICHAEL MANH	
			ART UNIT	PAPER NUMBER
			2822	

DATE MAILED: 10/22/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/005,827

Applicant(s)

YOO, WOO SIK

Examiner

Michael Trinh

Art Unit

2822

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 07 October 2003.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 2-6 and 8-10 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 2-6 and 8-10 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) <u>11</u> . | 6) <input type="checkbox"/> Other: |

Art Unit: 2822

DETAILED ACTION

*** This office action is in response to Applicant's amendment faxed on October 07, 2003.

Claims 1,7,11-16 were canceled. Claims 2-6,8-10 are currently pending.

*** The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

*** The indicated allowability of claims 2-6 and 8-10 is withdrawn in view of the newly discovered reference(s) cited in the IDS filed on May 01,2003. Rejections based on the newly cited reference(s) follow.

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

2. Claims 2-5 and 8-9 are rejected under 35 U.S.C. 102(b) as being by Granneman (WO 98/01890).

Granneman teaches (at Figs 1-2; page 6, line 18 through page 9) a system for processing a semiconductor device wafer comprising: a processing chamber 2; and a first heatable plate 6 positioned within said processing chamber and defining a first internal cavity (Fig 1) configured to receive a first gas 12 through a first passage into said first internal cavity at a first temperature and to emit said first gas from said first internal cavity at a second temperature through a second outlet passage 10 (page 6, lines 18-38); and a second heatable plate 7 disposed adjacent to said first plate, wherein said second plate defines a second internal cavity configured to receive a second gas through a first passage into said second internal cavity at a first temperature and to emit said gas from said second internal cavity at a second temperature through a second outlet passage 10 (Figs 1-2; page 7, lines 1-38; page 8, line 13 through page 9). Re claim 3 and further

Art Unit: 2822

claim 8, wherein said second passages comprise a plurality of holes 10 defined on a surface of said first and said second plates (Figs 1-2). Re claims 4 and further claim 8, wherein said first plate 6 and said second plate 7 comprises heat source means 8,9 for heating said plate to a preselected temperature (page 6, lines 28-33; page 7, line 27 through page 8). Re claim 5 and claim 9, wherein said first gas includes hydrogen and argon (page 4, lines 20-22), oxidizing or reducing gas for treatment (page 8, lines 2-5), and inert gas (page 8, lines 37-38).

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 5 and 9 are further rejected under 35 U.S.C. 103(a) as being unpatentable over Granneman (WO 98/01890) taken with Miyasaka (6,017,779).

Granneman teaches (at Figs 1-2; page 6, line 18 through page 9) a system for processing a semiconductor device wafer as applied to claims 2-5 and 8-9 above. Re claim 5 and claim 9, wherein said first gas includes hydrogen and argon (page 4, lines 20-22), oxidizing or reducing gas for treatment (page 8, lines 2-5), and inert gas (page 8, lines 37-38).

Re further claims 5 and 9, Granneman already teaches using hydrogen gas, inert gas, and oxidizing gas, but lacks mentioning other gases of He, H₂, O₂, Ar, N₂, and mixtures thereof.

Since the claims are drawn to an apparatus system, the recitation of gas limitations in the apparatus claims are entitled to little weight in determining the patentability of the claimed apparatus, wherein it is well settled that the patentability of apparatus claims cannot be predicated on processing limitations. In any event, Miyasaka is evidently cited to teach (at col 10, lines 62-65) introducing gases into a chamber, wherein the gases at least selected from a group consisting of He, H₂, O₂, Ar, and N₂.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to introduce gases into the chamber for processing a semiconductor wafer of

Art Unit: 2822

Granneman by alternatively employing at least one of the other gases of He, H₂, O₂, Ar, and N₂, as taught by Miyasaka. This is because these gases are art recognized alternative for substitution, and for processing of a semiconductor wafer to form a semiconductor device.

5. Claims 6 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Granneman (WO 98/01890) taken with Zhao et al (6,189,482).

Granneman teaches (at Figs 1-2; page 6, line 18 through page 9) a system for processing a semiconductor device wafer as applied to claims 2-5 and 8-9 above.

Granneman already provides the first and second plates having internal cavity, but does not teach the internal cavity further comprising a buffer to disperse the first gas throughout the internal cavity.

However, Zhao teaches (at Fig 1A, col 11, lines 27-37; 16A; col 30, line 12 through col 31) providing the internal cavity with a buffer 62 to disperse the gas throughout the internal cavity.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the internal cavity of the first and second plates of Granneman by providing the internal cavity with a buffer as taught by Zhao. This is because of the desirability to disperse the gas throughout the internal cavity so as to provide a uniform distribution of gases onto the wafer.

Response to Arguments

*** Applicant's amendment and remarks faxed on October 07, 2003 including the canceling of claims 1,7, and 13-16 has overcome the rejection using Zhao reference in the last office action.

*** Applicant's remarks faxed on October 07, 2003 about claims 2-6 and 8-10 have been noted, but they are moot in view of the new ground(s) of rejection using of the newly discovered reference(s) cited in the IDS filed on May 01,2003.

Art Unit: 2822

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael M. Trinh whose telephone number is (703) 308-2554. The examiner can normally be reached on M-F from 8:30 Am to 4:30 Pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Amir Zarabian can be reached on (703) 308-4905. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 308-7722 for regular communications and (703) 308-7724 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

Oacs


Michael Trinh
Primary Examiner